

REMARKS

Claims 46 and 50 have been amended to address the 35 U.S.C. § 112, ¶ 2 rejection. Applicants do not agree with the basis for the rejection, but have amended the claims to advance prosecution.

Applicants will submit an appropriate terminal disclaimer to address the obviousness-type double patenting rejection once the Examiner indicates that the claims are otherwise allowable.

Applicants will address the rejection of the independent claims in view of Pratt. Applicants also will explain why new independent claims 52 and 55 are patentable in view of Pratt. The dependent claims are patentable in view of Pratt for at least the reasons that the base independent claim is patentable in view of Pratt.

Claims 1 and 15 were rejected for lacking novelty in view of Pratt. Pratt discloses a composite including a thermoset polyurethane resin. A thermoset resin upon curing retains its three-dimensional structure and cannot be reprocessed when heated. Claims 1 and 15 have been amended to specify that the resin is a thermoplastic resin. A thermoplastic resin softens and is moldable at elevated temperature. Persons of ordinary skill in the art would recognize the differences between thermoset and thermoplastic resins. Thus, claims 1 and 15 are novel in view of Pratt; note that some polyurethane resins are thermoplastic (see claim 10) and some are thermoset (as described by Pratt).

Pratt also does not suggest the composites covered by claims 1 and 15. Pratt explicitly teaches using a thermoset type of polyurethane resin in his composite board. Presumably this is at least in part because Pratt wants the properties of a thermoset resin. Nothing in Pratt suggests the desirability of using a thermoplastic resin in place of the thermoset resin.

Claim 14 was rejected as being obvious in view of Pratt. But claim 14 requires using polyethylene in the composite. Pratt emphasizes that his composite board includes a thermosetting polyisocyanate, which after curing provides a thermoset polyurethane. Pratt does not suggest that a different polymer, let alone polyethylene, should be substituted for the thermosetting polyurethane. In fact, such a substitution would cut against the emphasis on the polyurethane in Pratt.

New independent claim 52 corresponds to claim 45 in the application as filed and is directed to a composite including the fibers, the resin, and an inorganic additive. The inorganic additive is a filler. Claim 45 was rejected as obvious in view of Pratt. Pratt does not disclose or suggest including an inorganic additive in his composite board. As a practical matter, the pulverized "fibers" used by Pratt are his filler. A person of ordinary skill in the art would recognize this and would not be motivated to add an inorganic additive as an additional filler.

New independent claim 55 is directed to a composite including the fibers and a resin, where at least half the fibers have a length to diameter ratio of at least 10:1. The fiber used by Pratt has an average a length to diameter ratio of well below 5 and could be considered as spheroidal in its nature, that is, it provides no reinforcement to the final composite. The second refining step used by Pratt relies on a hammermill (see col. 4, lines 59-62) or the like that pounds the fibers obtained during the first refining step into a material analogous to widely available wood flour; this material then is used in the composite board. Claim 55 requires use of much longer fibers, having a length to diameter ratio of at least 10:1. Pratt does not suggest, for example, skipping the second refining step but instead wants to use the much shorter fiber obtained after the second refining step.

Attached is a marked-up version of the changes being made by the current amendment.

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Applicants ask that all claims be allowed. Enclosed is a 465.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the claims:

Claims 1, 9, 10, 13, 15, 46, and 50 have been amended as follows:

--1. (Amended) A composite comprising a thermoplastic resin and fiber, wherein the fiber is cellulosic or lignocellulosic fiber that has been sheared.

9. (Amended) The composite of claim [1] 52, wherein the resin is a thermoplastic resin.

10. (Amended) The composite of claim [9] 1, wherein the thermoplastic resin is selected from the group consisting of polystyrene, polycarbonate, polybutylene, thermoplastic polyesters, polyethers, thermoplastic polyurethane, PVC, and Nylon.

13. (Amended) The composite of claim 1, wherein the composite comprises about 30% to about 70% by weight thermoplastic resin and about 30% to about 70% by weight fiber.

15. (Amended) A composite comprising a thermoplastic resin and fiber, wherein the composite has a flexural strength of at least 3,000 psi, wherein the fiber is cellulosic or lignocellulosic fiber that has been sheared.

46. (Amended) The composite of claim 45, wherein the inorganic additive is selected from the group consisting of calcium carbonate, graphite, asbestos, wollastonite, mica, glass, fiber glass, chalk, talc, silica, ceramic, [ground construction waste,] tire rubber powder, carbon fibers, and metal fibers.

50. (Amended) The composite of claim 1, wherein said composite is in the form of an article selected from the group consisting of panels, pipes, decking materials, boards, housings, sheets, poles, straps, fencing, members, doors, shutters, awnings, shades, signs, frames, window casings, backboards, wallboards, flooring, tiles, railroad ties, forms, trays, tool handles, stalls, bedding, dispensers, staves, films, wraps, totes, barrels, boxes, packing materials, baskets, straps, slips, racks, casings, binders, dividers, walls, indoor and outdoor carpets, rugs, wovens, and mats, frames, bookcases, sculptures, chairs, tables, desks, art, toys, games, wharves, piers, boats, masts, pollution control products, septic tanks, automotive panels, substrates, computer housings, above- and below-ground electrical casings, furniture, picnic tables, tents, playgrounds, benches, shelters, sporting goods, beds, bedpans, thread, filament, cloth, plaques, trays, hangers, servers,

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pools, insulation, caskets, bookcovers, clothes, canes, crutches, and other construction,
agricultural, material handling, transportation, automotive, industrial, environmental, naval,
electrical, electronic, recreational, medical, and textile[, and consumer products].--